



BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Halifax

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

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* Depending on the location of Core Habitats, your city or town may not have all of these sections.

Spring Salamander
(*Gyrinophilus porphyriticus*)
Species of Special Concern



Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.



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Introduction

In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generations to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, **BioMap** and **Living Waters**. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate **Core Habitats** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.



Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the **riparian areas**, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as **Supporting Natural Landscape** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was



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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, *Critical Supporting Watersheds* highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap		
Biodiversity Group	Species and Verified Natural Community Types	
	Included in BioMap	Total Statewide
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types
Living Waters		
Biodiversity Group	Species	
	Included in Living Waters	Total Statewide
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant



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species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- **Endangered** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- **Threatened** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- **Special Concern** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial **watch list** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The **Massachusetts Natural Heritage Atlas** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

communities reflects the documented number and acreages of each community type in the state:

- **Critically Imperiled** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- **Imperiled** communities typically have 6-20 sites or few remaining acres in the state.
- **Vulnerable** communities typically have 21-100 sites or limited acreage across the state.
- **Secure** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.



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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific *fact sheets* at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be

very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone 508-792-7270, Ext. 200

by Fax: 508-792-7821

by Email: natural.heritage@state.ma.us.

by Mail: North Drive
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
 - * Field guides
 - * Natural Heritage Atlas, and more!



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BioMap: Species and Natural Communities

Halifax

Core Habitat BM1153

Vertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Spotted Turtle	<i>Clemmys guttata</i>	Special Concern
Wetland Bird Habitat		-----

Core Habitat BM1169

Invertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
New England Bluet	<i>Enallagma laterale</i>	Special Concern

Core Habitat BM1176

Natural Communities

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Alluvial Atlantic White Cedar Swamp		Imperiled
Alluvial Red Maple Swamp		Vulnerable
Red Maple Swamp		Secure

Plants

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Long-Leaved Panic-Grass	<i>Panicum rigidulum ssp pubescens</i>	Threatened
Pale Green Orchis	<i>Platanthera flava var herbiola</i>	Threatened

Vertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
American Bittern	<i>Botaurus lentiginosus</i>	Endangered
Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened
Common Moorhen	<i>Gallinula chloropus</i>	Special Concern
Eastern Box Turtle	<i>Terrapene carolina</i>	Special Concern
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	Threatened



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BioMap: Species and Natural Communities

Halifax

Four-toed Salamander	<i>Hemidactylium scutatum</i>	Special Concern
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Threatened
King Rail	<i>Rallus elegans</i>	Threatened
Long-eared Owl	<i>Asio otus</i>	Special Concern
Northern Red-bellied Cooter	<i>Pseudemys rubriventris</i>	Endangered
Pied-Billed Grebe	<i>Podilymbus podiceps</i>	Endangered
Spotted Turtle	<i>Clemmys guttata</i>	Special Concern
Upland Sandpiper	<i>Bartramia longicauda</i>	Endangered
Wood Turtle	<i>Clemmys insculpta</i>	Special Concern



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BioMap: Core Habitat Summaries

Halifax

Core Habitat BM1153

Vertebrates

This Core Habitat encompasses Great Cedar Swamp and Burrage Pond in Halifax, as well as wetlands associated with Stump Brook. This mosaic of forested, shrub, and emergent wetlands provide significant habitat for Spotted Turtles. It also supports a diverse assemblage of breeding birds characteristic of the southern New England Coastal Plain, ranging from species that inhabit dry, early successional shrublands to those of forested wetlands. The Core Habitat includes a number of man-made impoundments and reservoirs, formerly constructed for commercial cranberry farming, but now part of the Burrage Pond Wildlife Management Area. Burrage Pond itself provides outstanding habitat for a variety of marsh birds and waterfowl, and intensive management should be able to create additional habitat for these and other types of wetland wildlife in the old cranberry impoundments.

Core Habitat BM1169

Invertebrates

This Core Habitat includes Robbins Pond in East Bridgewater and Robbins Reservoir (or Stump Pond) just to the east in Halifax, both of which provide important habitat for the New England Bluet damselfly. The Core Habitat is surrounded by development, but is located about 5 km from populations at Indian Head Pond in Hanson and Stetson Pond in Pembroke, which may allow for occasional dispersal of individuals among these three locations. Apparently, this Core Habitat is currently unprotected.

Core Habitat BM1176

This large and diverse Core Habitat encompasses habitat for state-listed rare plants, amphibians, reptiles, marsh birds, and grassland birds. It includes over 10 miles of the Taunton River and substantial reaches of several of its tributaries. Also included are a variety of forested wetlands, including several large Alluvial Red Maple Swamps. Much of this key Core Habitat remains unprotected.

Natural Communities

This Core Habitat contains a variety of forested swamps. It includes several large Alluvial Red Maple Swamps with intact hydrology and minimal disturbances. Alluvial Red Maple Swamps are a type of Red Maple Swamp that occurs in low areas along rivers and streams. Regular flooding enriches the soil with nutrients, resulting in an unusual set of associated trees and plants. One of the swamps in this complex is influenced by seepage and described as the only known one of its kind in the state.

Plants

A population of the Threatened Pale Green Orchis is found along a vernal pool near the Taunton River.



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BioMap: Core Habitat Summaries

Halifax

Vertebrates

This Core Habitat encompasses significant riverine, wetland, and upland habitats for Red-bellied, Blanding's, Wood, Spotted, and Eastern Box Turtles. Significant habitat for Four-toed Salamanders is also present. Two important areas of freshwater marsh provide habitat for rare birds, including Pied-billed Grebes, American Bitterns, and King Rails. Significant breeding habitat for Upland Sandpipers and Grasshopper Sparrows is also present. Relatively large areas of habitat exist in this Core Habitat for birds of forested wetlands. Over 90% of this large and diverse area is unprotected, and management may be needed to mitigate the fragmentation effects of several paved roads that impair wetland and riparian connectivity. Further, grasslands in the area need annual mowing and, ideally, occasional burning.



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Living Waters: Species and Habitats

Halifax

Core Habitat LW164

Invertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Eastern Pondmussel	<i>Ligumia nasuta</i>	Special Concern
Tidewater Mucket	<i>Leptodea ochracea</i>	Special Concern

Core Habitat LW222

Invertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Eastern Pondmussel	<i>Ligumia nasuta</i>	Special Concern
Tidewater Mucket	<i>Leptodea ochracea</i>	Special Concern

Core Habitat LW317

Exemplary Habitats

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Invertebrate Habitat		-----

Invertebrates

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Tidewater Mucket	<i>Leptodea ochracea</i>	Special Concern

Fishes

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Bridle Shiner	<i>Notropis bifrenatus</i>	Special Concern



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Living Waters: Core Habitat Summaries

Halifax

Core Habitat LW164

Monponsett Pond supports five of the state's twelve freshwater mussel species, including robust populations of the rare Tidewater Mucket and the Eastern Pondmussel. Mussels have been found anchored in the bottoms sands amongst moderately dense aquatic plants. During a recent visit to Monponsett Pond, successful reproduction of the Tidewater Mucket was evident, with young and old, as well as male and female mussels present.

Core Habitat LW222

Silver Lake has supported a diverse and robust group of freshwater mussels. Five of the state's twelve mussel species are known to occur here, including the rare Tidewater Mucket and Eastern Pondmussel. The population of the Eastern Pondmussel in particular, was found to be robust and showing evidence of successful reproduction. Unfortunately, Silver Lake recently suffered a massive mussel die-off that was attributed to low water levels from drought conditions and water withdrawals. More studies are needed to assess the current status of these important mussel populations.

Core Habitat LW317

This Core Habitat spans a portion of the Taunton River and extends up into the Winnetuxet River in Halifax, supporting rare invertebrate and fish species.

Here the Taunton River supports six of the state's twelve freshwater mussel species, including the rare Tidewater Mucket. This species is more likely to be found in ponds, and this occurrence is one of only two known river occurrences in Massachusetts. The Taunton River is slow-flowing, and has a river bed of softer sands and silts, although mussels are most often found in the sections with firmer substrates.

In the Winnetuxet River, studies of the dragonflies, damselflies, and other invertebrates led to the conclusion that this is one of the least developed river segments containing some of the best remaining aquatic habitats in southeastern Massachusetts. A section of the Winnetuxet River also supports the rare Bridle Shiner. This fish Species of Special Concern is thought to be in decline in eastern Massachusetts as it was found at only 23% of its former sites in recent surveys. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes.



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